

July 20, 1964

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SPECIFICATIONS

STAT

COUNTERS TO INTERFACE

WITH

COMPARATOR

STAT

A AND B SIGNAL REQUIREMENTS

Amplitude of Pulses

Positive going level change from (-) 9.6 to (-) 7.0 volts

Pulse Duration

1 microsecond up to six microseconds, to operate between frequencies ranging from one pulse an hour to 100,000 pulses per second

Rise Time

Can accept rise time up to five microseconds

Input Impedance

10,000 ohms minimum

Type of Count

Bi-directional and non complimentary

Direction of Count

Normal or reversed

Input Power Requirements

115 volt AC, 50-60 cycles per second

Accuracy

Absolute

Declass Review by NIMA / DoD

Stability

The counter shall not generate any internal pulses which would change the reading of the counter by more than two (2) counts in a twelve (12) hour period

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IN-PLANT  
ACCEPTANCE TEST PROCEDURE  
For  
"X" - "Y" STEREO CHIP COMPARATOR

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1.0

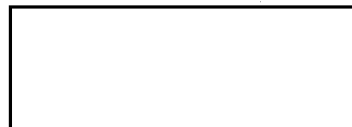
SCOPE

This document covers the acceptance test procedure to determine compliance with the requirements of the Stereo Chip Comparator.

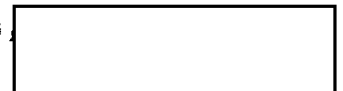
2.0

APPLICABLE DOCUMENTS

STAT



Quality Control Manual  
Inspection Reports

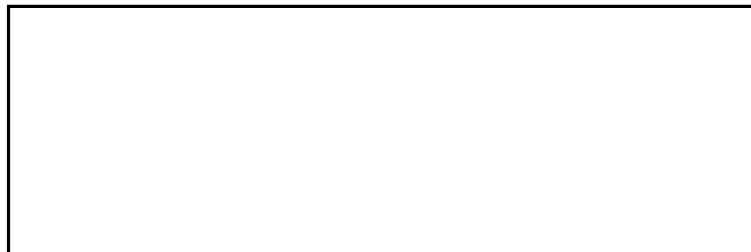


3.0

TEST FACILITY

In-plant acceptance tests specified herein shall be conducted at the test facility, located at the following address:

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6.9 A small illuminated spot is provided by a secondary projection system directly under the microscope objective in order to enable the operator to add to the ambient light of the large projection system. This spot can also be changed in color value. ✓

6.10 The stereo zoom microscope has sufficient vertical adjustment to accommodate various powers of magnification. ✓

6.11 The "X" and "Y" tables are provided with two-speed drives, operated by co-axially designed handwheels in such manner as to avoid physical contact of the operator with the "X" and "Y" table. ✓

7.0 INSTRUMENT REQUIREMENT (Functional)

The prime purpose of this instrumentation is to measure distances between two (2) points located within the 4.25 inch x 4.25 inch observation area within an accuracy of  $\pm$  two (2) micron by means of two (2) interferometers, one for the "X" axis and one for the "Y" axis. The output of these interferometers is accepted by a digital counter for each axis. The repeatability of these readings shall be within  $\pm$  two (2) microns. This accuracy is checked by the reading obtained from a grid covering the entire area of required observation. It shall be pointed out here, that one micron represents four (4) counts on the digital representation and our tolerance is equivalent to  $\pm$  eight (8) counts. For check-out purposes, two (2) test sheets are hereby attached; one for "X" axis readings, and one for "Y" axis readings.

4.0

TEST EQUIPMENT

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As this instrumentation is a homogeneously designed unit, the only additional test equipment required is a grid test plate to check repeatability of measurement over a part or all of the measurable area in steps of 0.5 inches in conjunction with the  Stereo Microscope Reticle.

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5.0

TEST CONDITIONS

For the purpose of these acceptance tests, the following conditions apply at  plant:

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Record

Temperature 78°F

Relative Humidity 40%

6.0

INSTRUMENT REQUIREMENTS (Visual)

By visual inspection, verify the following:

6.1

All parts and accessories are manufactured and finished in a thorough workmanlike manner, in accordance with best commercial practice.

✓

6.2

The instrumentation consists of three basic items, the Stereo Chip Comparator, the Control Console and the Vacuum Pump Unit.

✓

6.3

The Stereo Chip Comparator is equipped with an "X" and a "Y" Measuring Table.

✓

6.4

Both Tables have sufficient freedom of travel to allow visual observation and measurements over an area of 4.25 inches x 4.25 inches from two (2) 5 inch x 5 inch film chips through the use of a Stereo Zoom Microscope and an "X" and a "Y" Interferometer

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[REDACTED]

ILLEGIB

6.5

The film chips are held down individually by vacuum which can be independently controlled from the [REDACTED] Control Panel.

6.6

The right hand film chip holder can be placed in any position with respect to the left hand stereo chip holder within the practical area of observation up to an angular position of  $\pm 180$  degrees and can be firmly locked in place by vacuum application, independently controlled from the [REDACTED] Control Panel. This holder is also provided with a fine adjustment by means of micromatic screws. This adjustment is independent of vacuum application.

ILLEGIB

*Adjustment is 0.5" in two axes.*

6.7

Each film chip area is individually illuminated, the intensity of each is controlled from the [REDACTED] Control Panel.

*Illuminated area 5 x 5.07" each.*

6.8

The projected light beams to each film chip can be individually changed in color by means of two (2) selector switches located in the [REDACTED] Control Panel as an aid in stereo photo interpretation. These colors are; red, green, blue and white.

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*General Illumination: With 2x zoom - 10x*

*Spot only - 160 - 300 app.*

ILLEGIB

8.0

REPEATABILITY

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To determine repeatability of the equipment, the microscope crosshair is adjusted to be centered to a selected point on the test grid. Record reading. Move the "X" and "Y" axes off that point, and reposition carriages back to the same point. Record second reading. Repeat same procedure five (5) times. Care must be taken by the operator to center the target exactly every time, since the human error is included within this repeatability check.

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9.0 Brightness Measurements (Foot-Lamberts) through microscope.

Brightness full both general and spot at maximum:

Left Channel: with 10x objective. zoom 2x, 10x  eyepiece -150  
1x 320

3x  Obj. 2000 1x  1,000  
3x 200 2x 650

ILLEGIB

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Approved For Release 2003/05/15 : CIA-RDP78B04747A002700030050-5

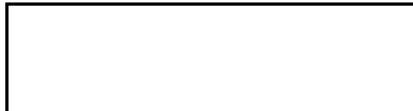
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1.0 SCOPE

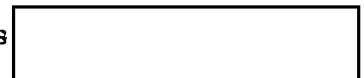
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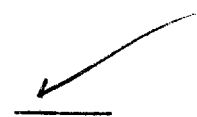
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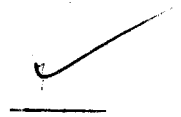
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DATA SHEET  
ACCEPTANCE TEST

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"Y" Axis: Digital Read-out Test Data

"O" Location: L.H. Side of Grid

Relative Location									
0									
1/2									
1									
1 1/2									
2									
2 1/2									
3									
3 1/2									
4									
Average									

Test Conductor: \_\_\_\_\_

Date: \_\_\_\_\_

Accepted: \_\_\_\_\_

Rejected: \_\_\_\_\_

1. Two weeks after delivery, installation & check-out - an answer to  
 [redacted] re # of projectors, filters [redacted]

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2. Pre-delivery: -

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a. Shorten cables in control console

3. Outline drawing of [redacted] mount casting if any change is being made.  
 [redacted] ASAP

4. Focus knob wearing - hardened gears required.

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Production Models: - 40% error due to sloppy optics.

1. Install vacuum pump in base of control cabinet. Raise height of control cabinet to same as basic inst. Visual display on top. Casters on control console.

~~2. Stop vacuum port in center of stage (top)~~

2. Foot switch for vacuum control - constant vacuum - switch to release only.

Present machine -

Drives - too stiff

Focus control - sloppy

Head rest - necessary

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WAVELENGTH

$\lambda = \text{Hg-198 Green Line} = 5460.782 \text{ \AA}$

At standard atmosphere 20°C.

SWITCH SETTING

<u>Switch Position</u>	<u>Microns Per Each Count</u>	<u>Counts Per MM</u>
1	$0.2730391 = \frac{\lambda}{2}$	3,662.47911
2	$0.1365195 = \frac{\lambda}{4}$	7,324.95822
3	$0.09101303 = \frac{\lambda}{6}$	10,987.4373
4	$.06825977 = \frac{\lambda}{8}$	14,649.9164